AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

WHAT IS CLAIMED IS:

1. (currently amended) A system for optimizing location-based services by adjusting a maximum antenna range (MAR) of a base station, the system comprising:

a test terminal for ~~sending~~ generating and transmitting a MAR optimizing data signal for use in optimizing the MAR, wherein the MAR optimizing data signal comprises conventional-GPS (C-GPS) geolocation information obtained in a C-GPS operation mode and assisted-GPS (A-GPS) data obtained in an A-GPS operation mode ~~including C-GPS geolocation information and A-GPS data which are received from at least one GPS satellite using conventional-GPS (C-GPS) and assisted-GPS (A-GPS) schemes, to at least one measurement point~~;

a base transceiver station for transmitting and receiving signals ~~and data~~ to and from the test terminal and having a preset MAR;

a base station controller for receiving and processing signals ~~emitted~~ transmitted from the base transceiver station and a mobile switching center connected to the base station controller; and

a position determination entity for receiving the MAR optimizing data signal through a mobile communication network including the base transceiver station, the base station controller and the mobile switching center, and analyzing the MAR optimizing data signal to update the preset MAR of ~~a wireless~~ base transceiver station ~~that meets MAR optimizing requirements, and optimizing the location-based services~~.

2. (currently amended) The system according to claim 1, wherein the position determination entity has an MAR optimizing algorithm for setting a maximum distance among distances between the wireless base station including the base transceiver station and each measurement point, as a new MAR

to update the preset MAR.

3. (currently amended) The system according to claim 2, wherein the MAR optimizing algorithm obtains the maximum distance by calculating the distance between the longitude and latitude coordinates of the ~~wireless~~ base station transceiver and those of each measurement point.

4. (original) The system according to claim 3, wherein the longitude and latitude coordinates of each measurement point are included in the C-GPS geolocation information received by the position determination entity.

5. (original) The system according to claim 1, wherein the test terminal is equipped with a C-GPS receiver.

6. (original) The system according to claim 1, wherein the test terminal is equipped with an A-GPS receiver module.

7. (original) The system according to claim 1, wherein the test terminal is a PDA (Personal Digital Assistant), a cell phone, a PCS (Personal Communication Service) phone, a handheld PC, a GSM (Global System for Mobile) phone, a W-CDMA (Wideband CDMA) phone, a CDMA-2000 phone, a MBS (Mobile Broadband System) phone, a notebook computer or a laptop computer.

8. (original) The system according to claim 1, wherein the mobile communication network includes a synchronous or asynchronous mobile communication network or a 4G ALL-IP communication network.

9.(canceled)

10. (original) The system according to claim 1, wherein the position determination entity communicates with an MAR database storing a table of MARs which are set according to identification codes of a plurality of wireless base stations.

11. (original) The system according to claim 10, wherein the position determination entity updates the table of MARs using a newly updated MAR and stores the updated table in the MAR database.

12. (original) The system according to claim 1, wherein the position determination entity communicates with an MAR optimizing database which stores the MAR optimizing data received from the test terminal.

13. (original) The system according to claim 12, wherein the MAR optimizing database stores the MAR optimizing data classified according to at least one of measurement dates, measurement times and identification codes of the wireless base stations.

14. (original) The system according to claim 1, wherein the position determination entity communicates with a reference GPS antenna which monitors geolocation information in real time according to identification codes of the GPS satellites.

15. (currently amended) A method for optimizing location-based services in a system comprising a test terminal for receiving GPS signals by using a conventional GPS (C-GPS) operation mode or ~~and~~ an assisted-GPS (A-GPS) operation mode ~~schemes~~, a mobile communication network which includes wireless base stations having a preset maximum antenna range (MAR)~~s~~ and a mobile switching center, and a position determination entity for resetting the MAR~~s~~ by ~~communicating~~ interworking with an MAR database storing geolocation information and the MAR~~s~~ of the wireless base stations, the method comprising the steps of:

(a) receiving and storing C-GPS geolocation information obtained in the C-GPS operation mode and A-GPS data obtained in the C-GPS operation mode, the C-GPS geolocation information and A-GPS data being transferred from the test terminal;

(b) analyzing the C-GPS geolocation information and A-GPS data of each wireless base station to determine an object

wireless base station for which MAR optimization is needed, wherein the object wireless base station is located adjacent to or covers at least one measurement point at which over a predetermined number of GPS satellites are observed and included in the C-GPS geolocation information and less than the predetermined number of GPS satellites are observed and included in the A-GPS data;

(c) calculating a new MAR by using a MAR optimizing algorithm, wherein the MAR optimizing algorithm sets the maximum distance between the wireless base station and each measurement point as the new MAR; and

(d) setting the new MAR as the optimized MAR of the object wireless base station and storing it in the MAR database.

16. (original) The method according to claim 15, wherein the C-GPS geolocation information contains information on latitudes, longitudes and number of GPS satellites from which the GPS signals have been received.

17. (original) The method according to claim 15, wherein the A-GPS data contains satellite identification codes, number of satellites, measurement time, strength of the GPS signals, pseudoranges, network IDs (NID) and base station IDs (BSID).

18. (original) The method according to claim 17, wherein the BSID is an identification code of a wireless base station whose coverage covers the test terminal which has transferred the C-GPS geolocation information.

19. (original) The method according to claim 15, wherein the position determination entity stores the received C-GPS geolocation information and A-GPS data in an MAR optimizing database at step (a).

20. (original) The method according to claim 19, wherein the position determination entity classifies the C-GPS geolocation information and the A-GPS data according to identification codes of the wireless base stations and stores

the classified information and data in the MAR optimizing database.

21.(canceled)

22.(canceled)

23. (currently amended) The method according to claim ~~22~~ 15, wherein the MAR optimizing algorithm obtains the maximum distance by calculating the distance between the longitude and latitude coordinates of the wireless base station and those of each measurement point.

24. The method according to claim 23, wherein the longitude and latitude coordinates of each measurement point are included in the C-GPS geolocation information received by the position determination entity.

25-35 (canceled)